



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 2  
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NEW YORK, NY 10007-1866

**NOV 23 2015**

Lauren McGee Rayburn  
Environmental Scientist  
Rural Utilities Service  
Rural Development, U.S. Department of Agriculture  
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Ashville, North Carolina 28801

Dear Ms. Rayburn:

The U.S. Environmental Protection Agency (EPA) has reviewed the draft Environmental Impact Statement (DEIS) for the proposed Arecibo Waste-to-Energy Generation and Resource Recovery Facility Project (CEQ # 20150217) prepared by the U.S. Department of Agriculture's Rural Utilities Service (RUS). Energy Answers Arecibo, LLC (Energy Answers) plans to request financial assistance to finance construction and operation of the proposed Arecibo Waste-to-Energy Generation and Resource Recovery Facility in Arecibo, Puerto Rico. RUS is authorized to make loans and loan guarantees to finance the construction of electric distribution, transmission, and generation facilities.

According to the DEIS, Energy Answers proposes to construct and operate a new 67-megawatt (MW) waste-to-energy (WTE) facility and resource recovery project on the 90-acre site of the former Global Fibers Paper Mill in the Cambalache Ward of Arecibo. The site is approximately 1.25 miles from the city of Arecibo and lies within the floodplain of the Rio Grande de Arecibo. The project would utilize approximately 79.6 acres of the total site area. The facility would, according to the DEIS, process approximately 2,300 tons of municipal solid waste (MSW) per day and generate a net output of approximately 67 MW, which the Puerto Rico Electric Power Authority (PREPA) would purchase. The proposed project components are: a municipal solid waste receiving and processing building, a processed refuse fuel storage building, a boiler and steam turbine, an emission control system, an ash processing and storage building, and other associated infrastructure and buildings, a 2-mile raw water line for cooling and process water, and construction of a 0.8-mile, 115-kilovolt transmission line to transmit the energy to PREPA's electrical grid. The RUS proposed federal action, presented in the DEIS, is to decide whether to provide financing assistance for the project. It is not known what amount of financing is being requested by Energy Answers, Arecibo, LLC from the federal government.

**Project Alternatives:**

The stated purpose and need for the project are, in summary, to "address[] the dwindling number of certified landfills [in Puerto Rico] for municipal and industrial solid waste by providing an alternative end use for the waste and recovering recyclable materials," and "develop an alternative [power] generation source to oil-derived fuels and reduce[] the fossil fuel emissions associated with petroleum fuel sources and methane emissions from diverting the waste from landfills." (DEIS, pp. 1-8, 1-9)

The only alternative to the proposed project that the DEIS evaluated in detail was the no action alternative. Pursuant to NEPA and the Council on Environmental Quality's NEPA regulations, RUS should evaluate and discuss additional alternatives in the EIS. See 40 CFR § 1502.14 (the EIS shall

“[r]igorously explore and objectively evaluate all reasonable alternatives,” including “reasonable alternatives not within the jurisdiction of the lead agency”). See also question 2a of the *Forty Most Asked Questions Concerning CEQ’s NEPA Regulations*, 46 Fed. Reg. 18026 (March 23, 1981): “In determining the scope of alternatives to be considered, the emphasis is on what is ‘reasonable’ rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.”

Among the alternatives to the proposed waste-to-energy project that EPA recommends be analyzed and discussed in the EIS are ones that would: (1) address the “dwindling number of certified landfills” in Puerto Rico through source reduction, reuse, recycling and composting; and (2) reduce the need for fossil fuel-based energy by employing clean renewable energy and/or comprehensive energy efficiency programs, including but not limited to wind, solar, geothermal and tidal energy.

With respect to item (1), EPA recommends that in the context of this EIS and the need, under NEPA, to explore and evaluate all reasonable alternatives, the EIS include an analysis and discussion as to whether, in lieu of the proposed waste-to-energy project, the MSW landfill capacity problem in Puerto Rico could be satisfactorily addressed through comprehensive source reduction, materials reuse, recycling and composting programs. The environmental impacts of such an alternative should be compared to those of the waste-to-energy project. While in its June 2013 Responses to Public Comments on the Clean Air Act Prevention of Significant Deterioration (PSD) Draft Permit for Energy Answers Arecibo, LLC (hereinafter, the “Response to Comments”),<sup>1</sup> EPA noted that recycling and waste-to-energy are compatible strategies, and disagreed with the assertion that the Energy Answers project will prevent communities from implementing strong recycling programs,<sup>2</sup> it is EPA’s view that source reduction, materials reuse, recycling and composting are the most environmentally preferred strategies for solid waste management and rank higher in the solid waste management hierarchy than combustion (please see EPA’s Non-Hazardous Materials and Waste Management Hierarchy at <http://www2.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy>).

It should also be noted that the Puerto Rico Solid Waste Management Authority’s 2008 “Dynamic Itinerary for Infrastructure Projects Public Policy Document,” cited in the DEIS, includes two scenarios: one with the waste-to-energy technology and one without. The second scenario (referred to as the

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<sup>1</sup> See <http://pubweb.epa.gov/region2/air/Responses%20To%20Public%20Comments-Energy%20Answers%20Arecibo,%20LLC%20.pdf> at pp. 54-55 and 57-58

<sup>2</sup> EPA’s Response to Comments also noted that Energy Answers’ Materials Separation Plan includes a pay-as-you-throw pricing system, which will encourage communities to recycle more and to generate less waste. EPA also included a condition in the PSD permit stating:

“With respect to municipal solid wastes supplied from municipalities, the Permittee shall accept municipal solid waste only from municipalities that: (i) have established a Recycling Plan under 12 L.P.R.A Section 1320b that has been approved by the Puerto Rico Solid Waste Authority (“SWA”) or are participating in a municipal consortium with a Recycling Plan approved by the SWA; or (ii) do not have such an SWA-approved Recycling Plan, but are covered by an order or other resolution issued by the SWA pursuant to 12 L.P.R.A Chapters 127 or 127A directing such municipality to submit its Recycling Plan to the SWA for its evaluation and approval and the time allotted for the submittal of such Recycling Plan has not expired.” [See Response to Comments at p. 25]



"Back-up Case Scenario") considers a waste diversion rate of 35%, the expansion of certain existing landfills, and no alternative technology solid waste processing facilities are constructed during this period. We recommend that this alternative be analyzed and discussed in the EIS.

As stated above, additional alternatives that would be appropriate for analysis and discussion in the EIS are ones that would involve using energy efficiency approaches and/or other forms of renewable energy, such as solar and wind energy, to meet the purpose of reducing the need for fossil fuel-based energy in Puerto Rico. We note that the April 15, 2011 Draft EIS prepared by RUS for Financial Assistance for a Biomass Plant and Related Facilities in Warren County, GA did consider whether other technologies, including renewable energy technologies, would meet the project's purpose and need.

Information about energy efficiency can be found at:

<http://www3.epa.gov/statelocalclimate/local/topics/energy-efficiency.html> and

<http://www.iea.org/topics/energyefficiency/>. Regarding renewable energy, according to the U.S. Energy Information Administration:<sup>3</sup>

A 24-megawatt solar PV plant at Guayama, and a 26-megawatt solar PV plant at Loiza initiated operations. A 95-megawatt wind farm at Santa Isabel became both Puerto Rico's first operating wind generator and the largest wind facility in the Caribbean. A 23-megawatt wind project at Punta de Lima, Naguabo, also started up in 2012. More than 400 megawatts of solar PV are in development, and, in 2014, PREPA renegotiated contracts for six large-scale solar projects to reduce power purchase costs and to require energy storage equal to 30% of project capacity. Some 250 megawatts of wind power are also in development, although studies to date show Puerto Rico has limited potential for large-scale wind projects.

#### **Additional issues relating to environmental impacts:**

- The proposed facility would need over 2 million gallons of water per day in order to function (DEIS at p. 2-7). The project proposes obtaining brackish water from the Caño Tiburones estuary, northeast of the proposed facility. The DEIS states on page 2-26, "PRDNER and Energy Answers have signed an agreement confirming the validity of the proposal to use the brackish water from its daily discharge." It is EPA's understanding, however, that PRDNER has withdrawn its endorsement of this use of the water. The EIS should acknowledge this and identify what water source would be used if use of the Caño Tiburones water is not allowed, and whether there would be environmental impacts associated with use of that alternative source. In addition, the EIS should consider whether the proposed waste-to-energy facility can use a closed-loop system to reduce its water needs, and whether drought conditions would impact the facility's ability to operate.
- Page 3-130 of the DEIS anticipates that about 20 percent of the weight of the solid waste that would be processed at the plant would become waste ash byproduct, yielding about 420 tons per day of ash. The DEIS also indicates that the ash will be disposed of in an authorized landfill. The EIS should identify which landfill will receive the ash and specify the landfill's long-term capacity for accepting it. Further, we recommend that the EIS specify if both type of byproducts (fly ash and bottom ash) together would produce the 20 percent and if both would be disposed in the same landfill.

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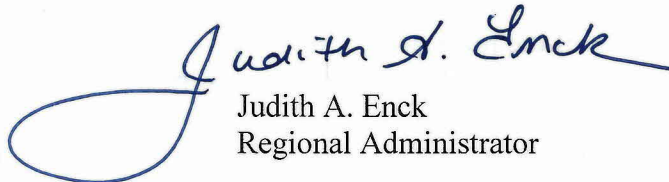
<sup>3</sup> <http://www.eia.gov/state/print.cfm?sid=RQ>

- Under the proposed project, the project area would be raised to a height of 21 feet above mean sea level outside the floodway limit by bringing fill to the site and using the fill from the planned bank modification where the field elevation will be lowered to 8.2 feet from 17.1 feet above mean sea level. While the DEIS states that no adverse impacts are expected to the Rio Grande de Arecibo due to floodplain alterations, it is not clear whether a possible increase in flooding risk will occur to the structures south of the site project. These issues should be examined.
- The DEIS indicated the possibility of increased runoff downstream (p. 4-5), but did not identify whether the analysis/model looked at future impacts to the surrounding area based on the floodplain modifications plans.

Based on EPA's review of the DEIS, EPA has rated the project and document as Environmental Concerns and Insufficient Information, EC-2. EPA encloses a summary Rating Sheet for your information. The objectives identified in the project purpose and need are important issues for the people of Puerto Rico. The environmental issues associated with this decision are significant. Because of that, we suggest that RUS consider some additional public process around the new information we have presented to seek input on whether this project is the best approach for meeting that purpose and need. We suggest that process include a public hearing in which there is simultaneous English-Spanish translation. We have also enclosed additional comments for you to consider regarding the proposed RUS action.

If you have any questions or would like clarification regarding EPA's comments, please contact Ariel Iglesias, Deputy Director of the Clean Air and Sustainability Division at 212-637-3315 or [iglesias.ariel@epa.gov](mailto:iglesias.ariel@epa.gov).

Sincerely,



Judith A. Enck  
Regional Administrator

Enclosure

### Additional EPA Concerns:

- The DEIS includes projected sources of raw materials for the project. The solid waste generation projections from the 2008 Dynamic Itinerary should be updated in Table 2-1 of the DEIS to reflect more recent status on waste generation, recycling, landfill closures, transfer station construction, etc. in Puerto Rico.
- The DEIS does not consider the economic impact of potential changes (particularly increases) in fees for waste removal for residents of the municipalities that may be sending waste to Energy Answers. The Dynamic Itinerary includes data which indicate that tipping fees are quite a bit higher for a waste-to-energy facility than for landfilling or recycling. We recommend including this analysis in the socioeconomic impacts section of the EIS.
- The DEIS contains inconsistent statements with regard to the electrical output of the proposed facility. Under Project Overview and Description, the DEIS states that the project would generate a net output of approximately 67 MW. Page 2-27 indicates that the project would produce 80 MW of electric power, with 70 MW being sold to PREPA, and page 3-46 indicates a capacity of about 79 MW of electricity, for a net project output of 67 MW after in-plant needs are met. Meanwhile, the Federal air permit issued for the project indicates the facility will be able to produce up to 77 MW of electricity. Please explain the differing numbers and what this means with regard to the actual functioning of the facility.
- On page 2-11, the DEIS states that the plant would receive "municipal solid waste (MSW) from municipalities along the north-central and north-eastern side of the island." This should be north-central and north-western. In addition to the map, please provide a list of the municipalities that have signed contracts to send waste to the proposed facility.
- The statement on page 3-40 that general conformity does not apply to major sources receiving a prevention of significant deterioration (PSD) permit is not accurate. Section 93.153(d)(1) of Title 40 of the Code of Federal Regulations indicates that the portion of the action that requires a PSD permit, meaning the permitted emissions of the facility, does not undergo a conformity determination. A PSD permit does not cover the construction phase nor transportation emissions. Given that the RUS loan would be a Federal action distinct and separate from the PSD permit, construction and transportation emissions must be considered under general conformity. However, general conformity only applies in areas that are not in attainment of the National Ambient Air Quality Standards. Since the project area is only in nonattainment for lead, an applicability analysis, which includes all direct emissions from demolition, construction, and renovation activities, must be performed. As stated above, Section 93.153(d)(1) excludes the lead emissions of the facility itself (0.31 ton per year) from being counted toward the *de minimis* threshold.
- Please clarify the following proposed emission rates in tons per year (TPY) indicated in Table 3-20 on page 3-48: Ammonia at 28.8 TPY; Municipal waste combustor metals at 42.8 TPY; and Municipal waste combustor acid gases at 415 TPY. These numbers differ from those in the approved air permit. Also, change "2, 3, 7, 8-Tetrachlorodibenzodioxin" to "dioxins and furans" when identifying how combustor waste organics are measured.

- The DEIS indicates that the Puerto Rico Department of Natural and Environmental Resources completed a karst study in 2008, but that the amendment to the earth crust regulation to include the priority conservation area has not been completed. Although not currently regulated/zoned for preservation, we recommend that the EIS identify whether the proposed waste-to-energy facility is located in or near the karstic region that was identified in the 2008 study.
- Page 3-83 indicates “a stack height of 351 feet (107 meter)”; the PSD permit as well as page 3-101 indicate “a stack height of 95.5 meters (313 feet)” above grade. Please clarify and indicate what the Federal Aviation Administration used to make its determination of no substantial adverse effect on safety of airspace operations.
- Page 3-130 mentions that the project will employ approximately 150 full-time operating personnel for 30 operation years, but the life of the project is noted as 50 years or more. Please clarify the difference in years.